How this investigation fits within the “Concept and Lesson Map”:

**Overview for Unit 2: Land and Water Snails**

* Observe and describe the environment in which land and aquatic snails survive.
* Students observe and compare the structure and behavior of land and aquatic snails.

**Overarching question(s) for this whole investigation:**

* How are the body parts and behaviors of land and water snails the same and different?
* Why do the snails use certain body parts?

**Attending to “How People Learn”**

How People Learn Key Finding #1: Preconceptions

**Eliciting Student Ideas:**

* Have students draw their predictions of land snail body parts in the top portion of the Prediction/Observation Journal Page prior to observing land snails.
* Follow questions as written on page11 under ‘Observe Snail Activities’ to guide a class discussion prior to observations of snails.

**Common Student Preconceptions:**

* [How can you tell something is alive?] “Pupils suggested... behavior of the object...some sort of movement... (and) external structure.” (Driver 1994)

How People Learn Key Finding #2: Facts/Concepts/Knowledge

**WA State Content Standards “Science Domains” (EALR 4)**

* K-1 LS1B All plants and animals have various external parts.
* K-1 LS2B A habitat supports the growth of many different plants and animals by meeting their basic needs of food, water, and shelter.

**WA State Science Standards “Crosscutting Concepts and Abilities” (EALRs 1-3)**

* K-1 INQC Scientists develop explanations using recorded *observations* (*evidence*).
* K-1 SYSA Living and nonliving things are made of parts. People give names to the parts that are different from the name of the whole object, plant, or animal.
* K-1 INQA Scientific investigations involve asking and trying to answer a question about the natural world by making and recording observations.

**Key Understandings For the Teacher:**

* + Read pages 4-7 of Investigation 4: Land and Water Snails folio.

How People Learn Key Finding #3: Metacognition

Metacognition: How did my thinking change? What caused the change? How did I come to believe this?

Using the Prediction/Observation Journal Page for land snails, have students draw their predictions of land snail body parts in the top section prior to observing the land snails. Have students draw their observations of land snail body parts in the bottom observation section of the Prediction/Observation Journal Page for land snails.

**Suggested Assessments for Student Understanding:**

Have students circle the parts of their observed land snail body parts that are different than the water snail body parts (use bottom of Prediction/Observation Journal Page for land snails).

**Additional Information**

**Materials and Student Management**

* The focus of the shell sort of part 4 of this investigation is describing and using descriptors to sort and categorize.
* Use FOSS Student Sheet #30 (home/school connection page) to have students progressively add animals to the picture of the environments after investigating each animal. Students color and cut out the picture of the animals, then glue them to the picture in the correct environment for that animal. This is a page in their science notebook that students’ will refer to after each investigation. This sheet could also be re-done at the end of the unit as an assessment piece.
* Though the FOSS investigation teacher instructions label recording observations as ‘optional’ it is a critical piece to help students understand how their thinking changes.

Timing Considerations

* Order live organisms ahead of date needed. Allow 3 weeks for shipping.